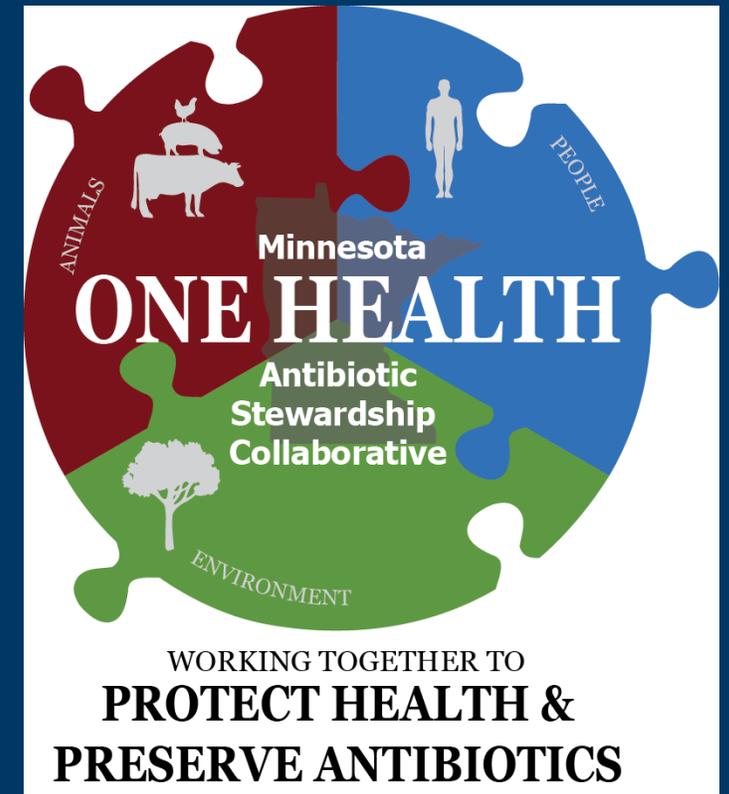


# Minnesota One Health Antibiotic Stewardship Collaborative

*Increasing awareness and behavior change  
through a collective mission, cross-disciplinary  
learning, and sharing of evidence-based  
approaches to antibiotic stewardship*



MINNESOTA

Amanda Beaudoin, DVM, PhD, Diplomate ACVPM  
Director of One Health Antibiotic Stewardship  
Minnesota Department of Health

PACCARB Public Meeting, January 31, 2019

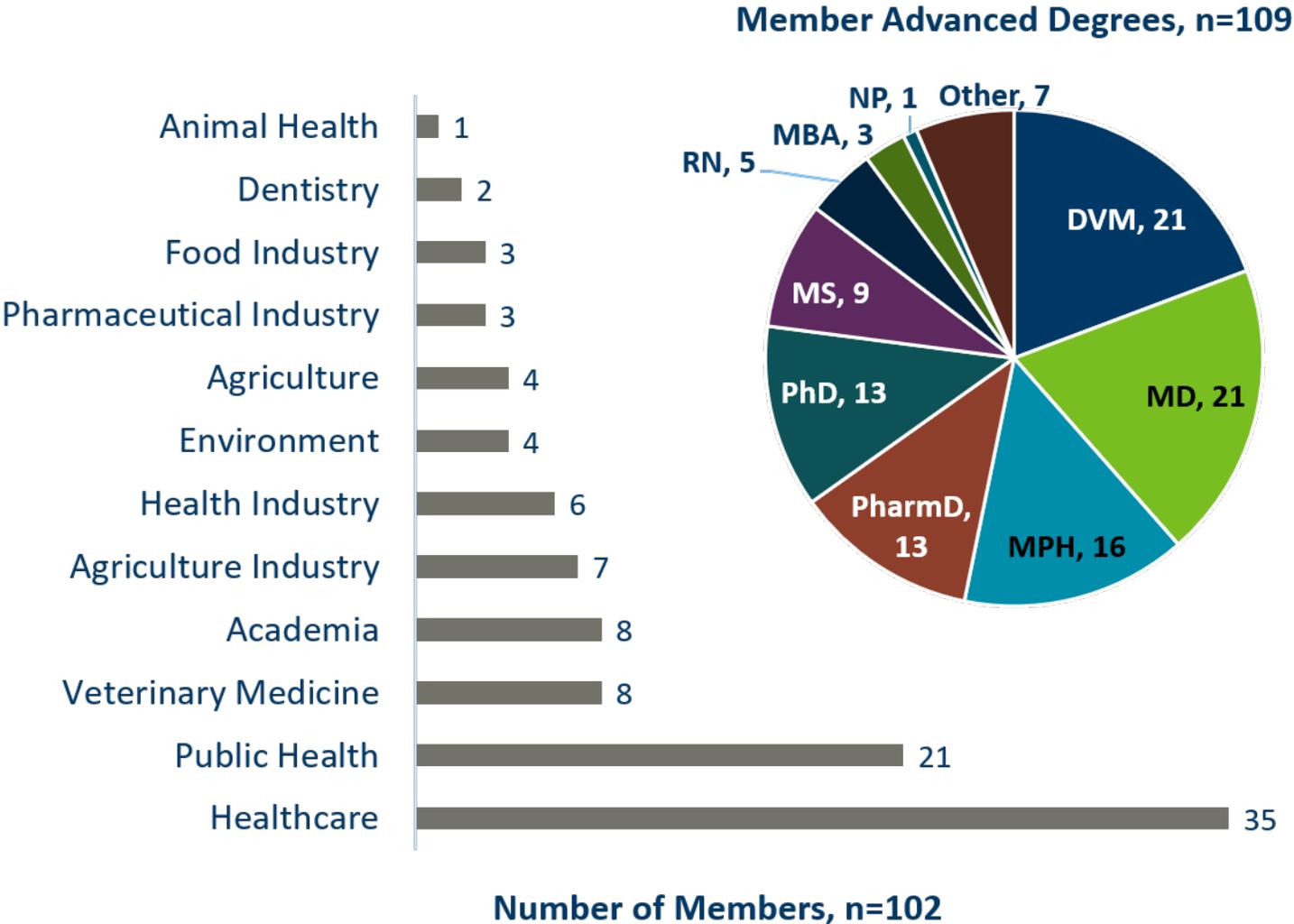
# Conflicts of Interest

- No financial relationships to disclose

# MN One Health Antibiotic Stewardship Collaborative (MOHASC)

## Collaborative Participants

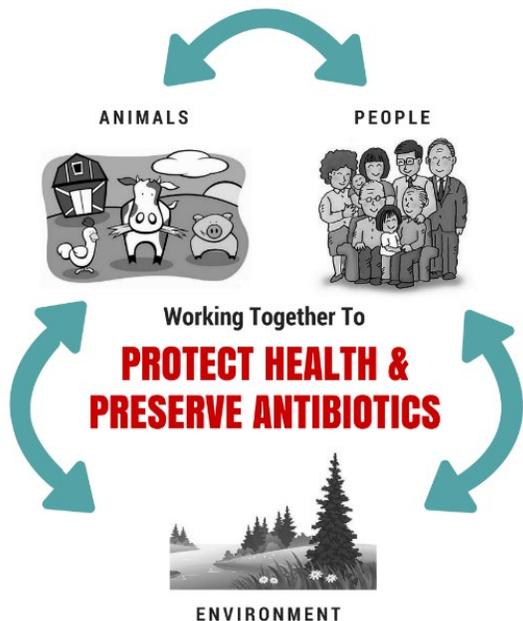
- **State agencies** of health, agriculture, environment, animal health
- **Healthcare professionals** from inpatient, outpatient, long-term care, dentistry
- **Veterinary professionals** from large and small animal clinical practice
- **University researchers** from veterinary medicine, engineering, chemistry, pharmacy, medicine
- **Industry and professional organizations**, human and animal
- **Pharmaceutical companies**, human and animal



# Communicating Collaboratively

## MOHASC Vision

Minnesota leaders in human, animal, and environment health will work together to raise awareness and change behaviors to preserve antibiotics and treat infections effectively.

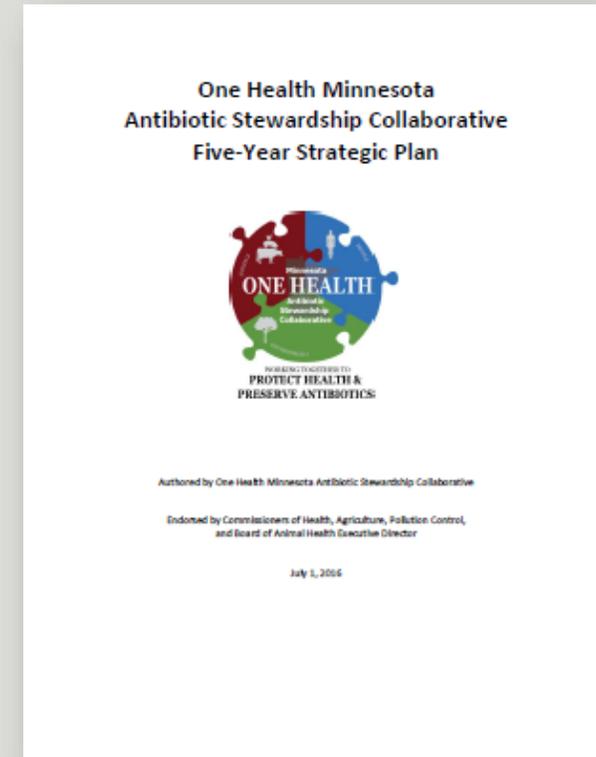


## Communication Approach:

- Human, animal, and environmental health are inseparable.
- All antibiotic use can lead to resistance.
- There is some contribution to resistance from every sector using antibiotics
- Lack of “proof” of harm is not an argument for irresponsible use.
- Greater abuse in other disciplines is not an argument for injudicious use in yours.
- There are unreasonable critics.
- Behavior change is key.

# Five-Year Strategic Plan Goals (2016-2021)

- Promote understanding of One Health antibiotic stewardship
- Improve human antibiotic stewardship
- Improve animal antibiotic stewardship
- Develop “antibiotic footprint” tools



# How MOHASC Works

## Operational Logistics

- **Annual in-person meeting**
  - Discussion of hot topics in each health discipline, Q&A
- **4 Work Groups align with strategic plan goals**
  - Quarterly calls held to advance projects
- **Email bulletin**
  - >700 recipients in MN and beyond
  - Stewardship news from all health disciplines, education opportunities, MOHASC updates
- **Website**
  - Platform for human, animal, environmental health professionals, educators, public
- **Multistate One Health stewardship quarterly call**
  - Federal agencies, national organizations, >20 states

## Impact

- **Collective vision magnifies state investment**
  - 1.0 FTE at Minnesota Department of Health
  - >1,000 hours/year of in-kind member contributions
- **A common mission energizes daily stewardship practice**
  - New resources, ideas, research opportunities
- **Networking drives practice change**
  - Mentorship that benefits giver and recipient
  - Improved continuing education offerings
- **Evidence-based approaches are shared to fill gaps**
  - Healthcare tools modified for other care settings and for animal health
- **Together, we ensure the public receives reliable information**
  - Website, fact sheets, videos, Minnesota State Fair booth

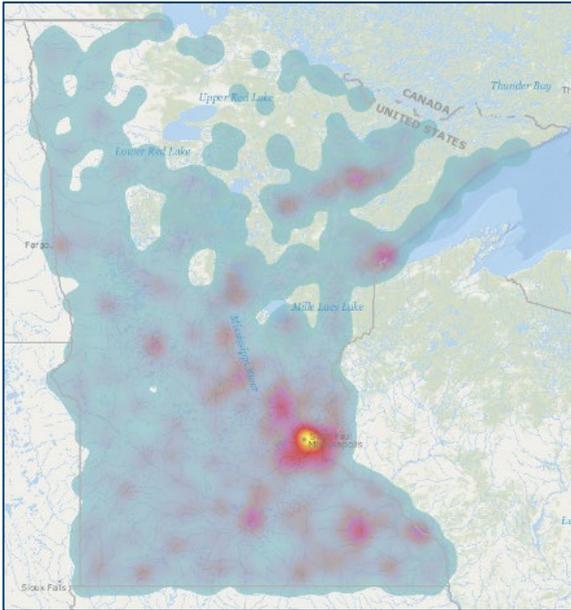
# Sharing Stewardship Approaches Across Facilities, Settings, Disciplines

- **Antibiotic Stewardship Honor Roll Program for Acute Care and Long-Term Care**
  - Three levels provide incentive to improve stewardship over time
  - Gold “Collaboration” level fosters mentorship, improved prescribing and communication across care transitions
- **Antibiotic use measurement with point prevalence**
  - Used to measure healthcare antibiotic use nationally
  - First point prevalence survey ongoing at university veterinary hospital
- **Commitment posters for multiple care settings**
  - Evidence-based approach to change prescribing behavior
  - Customizable, with facility logos and photo



# Using Minnesota's Antibiotic Footprint to Define Consequences of Antibiotic Use and Drive Behavior Change

## Mapping Minnesota's Antibiotic Footprint in the Natural Environment



### 1. Map-based modeling

- Where are antibiotics used, and where do they end up?

### 2. Environmental sampling

- Measure antibiotic concentrations, resistance genes in environment

### 3. Model validation

## Outcomes

- Develop a tool to predict environmental contamination with antibiotics and resistance genes
- Propose risk-based mitigation and behavior change strategies to minimize antibiotic resistance
- Maximize impact of funds invested to protect environmental, human, and animal health

## The “D”s of Antibiotic Stewardship Drive Behavior Change

- **Diagnosis.**
- **Drug.**
- **Dose.**
- **Duration.**
- **De-escalation.**
- **Disposal.** Dispose of antibiotics properly. Do not put in sink, toilet, or trash.

~~D=5~~

D=6

# Professional and Public Engagement to Increase Knowledge

## Minnesota State Fair



## Antibiotic Stewardship Professional Exchanges

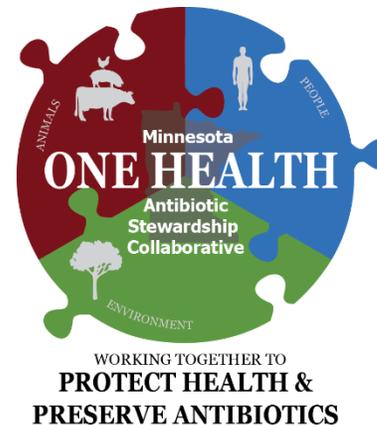


## Annual Meetings



# Acknowledgements

- **Minnesota One Health Antibiotic Stewardship Collaborative membership**
- **Ruth Lynfield MD**, State Epidemiologist and Medical Director, Minnesota Department of Health
- **Beth Thompson JD, DVM**, State Veterinarian and Executive Director, Minnesota Board of Animal Health
- **Minnesota Commissioners** of Health, Agriculture, Pollution Control Agency
- **Emma Leof MPH**, CSTE Applied Epidemiology Fellow
- **Minnesota Department of Health HAI-AR Unit staff**
- **CDC Division of Healthcare Quality Promotion** for continued ELC funding of MOHASC Director position



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